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ABSTRACT

A plan for achieving institutional excellence is presented by Kean College of New Jersey. The college's identity, heritage, values, constituencies, and priorities are defined, and a profile of the college's student body and academic program is provided. A section on shared governance presents a framework for the five strategic goals the college has identified for the next 3 years and beyond: improving access and persistence, implementing general education and strengthening academic majors, assessing and improving student achievement, expanding faculty and professional staff development, and integrating computer technology and applications. The college serves a diverse student population that includes large numbers of Black and Hispanic students, females, senior citizens, part-time students, and international students. Many of the students are the first members of their families to attend college. In addition to a wide array of student-oriented services and activities, emphasis has been placed on excellence in teaching, commitment to developmental coursework, special tutorial services, and honors programs. (SW)

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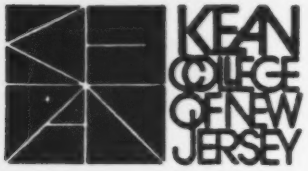

Excellence & Equity

A Strategic Three Year Plan for Kean College of New Jersey

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PREAMBLE

THE CHARACTERISTICS OF EXCELLENCE

The Governor's Challenge

This document represents Kean College's response to the Governor's Challenge that each of the State Colleges develop a comprehensive plan that would "chart their own paths to greatness." The plan, according to the Department of Higher Education, should be "mission-centered and should document the college's efforts to strengthen, to modify, and to clarify the institution's mission and to make the college academically distinctive." The plan must also include an institutional portrait focused on fundamental characteristics of the institution's student body and academic offerings. The vital core of the plan would lie in the strategic goals the college has set for itself in order to achieve excellence and in the specific objectives by which those goals would be met.

The Core of Excellence

Kean College strongly subscribes to the view that new measures of institutional excellence are needed. The challenges confronting higher education in today's world require it. The new measures must transcend many of the indices which have traditionally provided the basis for judgments about institutional quality.

According to the Commission on Higher Education of the Middle States Association of Colleges and Schools, "a major index of an institution's quality is the astuteness with which it has identified its task." Kean College concurs with the Commission that the

measure of a superior institution's task must rest on a certain core of elements. In the view of the College, these must include seven vital elements identified by the Commission:

* The integrity with which an institution treats its constituencies, respects the public interest, and maintains responsibility for all its endeavors
* Clearly stated mission, goals, and objectives appropriate to the institution's resources and the needs of its constituents
* Admissions policies clearly stated and related to the goals and resources of the institution
* Curricula which provide, emphasize, or rest upon general or liberal education
* Persistent concern as to the relation between goals and outcomes
* Emphasis on continuous intellectual and professional staff development, within a secure framework of academic freedom
* Organization and administration which facilitate teaching and learning

Conditions of Excellence

A common thread in much of the recent discussion on the performance of institutions of higher education is that traditional measures of excellence such as endowments and expenditures, the test scores of entering students, and selectivity in admissions fail to adequately tell us, in the words of the National Institute of Education's Study Group on the Conditions of Excellence in Higher Education, "what students actually learn and how much they grow, as a result of higher education." Excellence, according to the report of the NIE Study Group, Involvement in Learning: Realizing the Potential of American Higher Education, requires that "institutions of higher education produce demonstrable improvements in student knowledge, capacities, skills and attitudes between entrance and graduation."

Thus, "adequate measures of educational excellence must ... be couched in terms of student outcomes- principally such academic outcomes as knowledge, intellectual capacities and ... other dimensions of student growth, such as self confidence, persistence, ... social responsibility, and understanding of cultural and intellectual differences."

A similar approach to institutional excellence is embodied in the American Association of State Colleges and Universities' much-cited volume, In Pursuit of Degrees with Integrity: A Value-Added Approach to Undergraduate Assessment. Based on the experience of a regional public institution with a student and academic program profile similar to that of Kean College, the AASCU volume provides a way of assessing institutional quality that is certain to have broad appeal:

> A value-added approach, which stresses student learning outcomes relative to student input potential, provides the means by which an institution can focus on educational quality.
>
> As a concept then, value-added refers to the positive differences that an educational experience makes in a student's knowledge, attitudes, and skills. A value-added approach emphasizes the use of qualitative measurement to monitor student change and develops information which allows an institution to see how its actions influence that change.

The Path to Excellence

We believe that the remainder of this document represents Kean College's prescription for and commitment to institutional excellence. The section on the College's mission defines our identity, heritage, values, constituencies, and priorities. The institutional portrait builds on the statement of mission and provides an overview, rich in detail, of the College's student body and academic programs. The

section on shared governance provides a framework for the five strategic goals the College has set for itself in the next three years and beyond (Improving Access and Persistence; Implementing General Education and Strengthening Academic Majors; Assessing and Improving Student Achievement; Expanding Faculty and Professional Staff Development; and Integrating Computer Technology and Applications).

These goals express the conviction that Kean College is uniquely prepared for value-added approaches and methods. The student body is racially and culturally diverse. Most are from urbanized regions of the State, and many from economically and educationally disadvantaged backgrounds. Most are the first in their family to attend college. What these students find at Kean College is a faculty and administration which are highly supportive and committed to providing the best possible educational experience. The wide array of student-oriented services and activities reflect a constructive and cooperative relationship between faculty and administration which is long standing. Excellence in teaching, commitment to developmental course work, special tutorial services, honors programs and a great many more activities detailed within this document provide evidence of a job well done. Dedication to providing an ever greater measure of student growth and achievement is Kean College's own map for its path to excellence.

MISSION STATEMENT AND MAJOR PRINCIPLES FOR KEAN COLLEGE

MISSION STATEMENT

Kean College of New Jersey is a public college with an enrollment of approximately 12,600 students. The College offers a comprehensive range of academic programs in the liberal arts, the natural and social sciences, the health professions, teacher education, and the applied disciplines at the undergraduate and graduate levels.

The College serves a diverse student population that includes large numbers of black and Hispanic students, females, senior citizens, part-time and international students. Many of these students are the first members of their families to attend college and are representative of the pluralistic character of the region and the State.

Over the last decade the College has made significant strides in responding to the evolving career goals and aspirations of its students. Programs in management science, accounting, the health professions, and public administration have been introduced and enriched. The undergraduate major program in computer science is the largest among New Jersey's State Colleges, and a graduate level program in management systems analysis is being introduced in Fall 1985. Academic major programs in the health professions including occupational therapy, upper division nursing, and

medical records administration have been carefully developed and nurtured. Each of these programs has a strong clinical component involving local hospital and medical facilities. The academic programs in biology and chemistry/physics, have been strengthened both in terms of their major course offerings and in support of the health professions.

There is a rich array of major programs in the arts, humanities, and social sciences. Further, there is a firm commitment to provide a rigorous liberal arts foundation in all academic programs. The general education program, which has been recently revised, includes an eighteen credit interdisciplinary core which will be required within a total program of fifty-four credits.

Teacher education programs have recently been restructured and now require a more intensive and extensive liberal arts component as well as a strengthened professional educational sequence.

The College strongly encourages and supports basic and applied faculty research within the academic disciplines. Special support is given to activities which are concerned with improving the quality of instruction and developing new teaching techniques. Excellence in teaching is central to the mission of the College.

The College is a center for cultural and public events particularly in the fine and performing arts. An extensive program of concerts, art exhibits, theatrical performances, lectures and conferences are offered throughout the year for students and the

public.

MAJOR PRINCIPLES FOR KEAN COLLEGE

There are several major principles which are fundamental to the mission of the College. These principles are embodied in the strategic goals of Kean College and they reflect one of the noblest aspirations of the American people - the achievement of social democracy.

1. Educational Opportunity

   Kean College has a deep commitment to providing the best educational opportunities to a pluralistic student population. Women, minorities, persons of all ages and ethnic backgrounds are supported and will be actively recruited in their endeavor to obtain a college education.

2. General Education

   Kean College offers a general education program that defines the meaning and purposes of liberal education and provides a fundamental understanding of the important forces that have shaped and continue to influence the modern world.

3. Responsiveness to Change

   Kean College intends to identify and respond to changing social and economic conditions and to the evolving needs of the people in this region and the State. These responses are most evident in the scope and depth of academic programs, the introduction of computers and other technological advances into the curriculum the policy of systematic and periodic evaluation and revision of academic programs at the undergraduate and graduate level, and the various

initiatives in basic and applied research.

4. Excellence in Teaching

Excellence in teaching is central to the mission of the College. This goal is vigorously encouraged and financially supported through a number of initiatives including the career development program, independently directed research activities, career and sabbatical leaves, the Kean Instruction Team, the Computer and Research Institute, and the Human Resource Development Committee.

INSTITUTIONAL PORTRAIT

INTRODUCTION

Kean College of New Jersey is a state supported institution offering undergraduate and graduate instruction in the liberal arts, the sciences, and the professions. Situated in the heart of one of the most industrialized regions of the United States, the College serves approximately 12,600 full and part-time students, most of whom commute to the campus in Union Township. On-campus housing is provided for 1,300 primarily undergraduate students. Although students are enrolled from all twenty-one counties in New Jersey and from neighboring states, approximately 65% reside within urban areas of the counties immediately surrounding the campus, especially Union, Essex, and Middlesex. These counties comprise the Newark Standard Metropolitan Area, a heavily populated and a racially, ethnically, and economically diverse area of New Jersey.

A synopsis of the demographic and economic characteristics of the three counties indicates the challenges facing Kean College. Blacks comprise 37% of the population of Essex County, 16% of Union County and 6% of Middlesex County. Corresponding percentages for Hispanics are 9% in Essex, 8% in Union and 6% in Middlesex, with these latter percentages projected to grow substantially during the decade ahead. As of the most recently published statewide data (July 1984), population declines in the two larger counties (Essex and Union) were the largest in New Jersey (9% and 7%) over the most recent decade. In contrast, modest population

growth was registered for Middlesex (2%) and the State as a whole (3%).

Median family income in Essex County declined by 3% during the most recent census decade, with the poverty rate for families (15%) double that of the State (8%). Median family income grew a modest 4% in Union County (matching the State's growth rate) and more substantially in Middlesex (11%).

The economy of the three county region has traditionally been dominated by manufacturing, particularly chemicals, pharmaceuticals, printing, food processing and metals fabrication. However, manufacturing industries have, as in other industrialized regions of the Northeast and Midwest, experienced substantial declines. While there has been growth in service industries within New Jersey, for which the College offers an array of strong career-oriented academic programs, Middlesex County particularly has seen substantial growth in high technology employment, especially along the Route 1 corridor between New Brunswick and Princeton.

The College reflects the demographic and cultural pluralism of the region. This results from the diverse programmatic offerings of the College as well as the institution's commitment to offer educational opportunity to all who can benefit from its academic programs. Student diversity is evident in the range of academic preparation prior to entrance to the College, in the large percentage of minority and international students (approximately 26%), in the substantial percentage of the College's students who are over 25 years of age, and in the fact that many students attend college on a part-time basis.

As expected, this diverse student population looks to the College to fulfill a multitude of educational needs. Many students seek the best in a liberal arts education and enroll in traditional programs such as English, chemistry, and psychology. For such students the academic experience is preparation for graduate study in the major discipline or advanced professional programs in law, business, or education and prepares them for a wide array of professional positions requiring a baccalaureate degree. Programs in management science, accounting, the health professions, public administration, computer science, and technology have been introduced and enriched. There has been parallel program development at the graduate level in recent years with the establishment of master's level programs in public administration, management systems analysis, and liberal studies.

The principle underlying undergraduate education at Kean College is that fundamentals of the liberal arts are central to the academic experience. The College will introduce a greatly strengthened General Education Program in September 1985. The new requirements which include an 18 credit interdisciplinary core curriculum as the focal point are included in every major program offered by the College. Designed to develop the knowledge and skills that should be attained by every graduate of the College, the General Education Program will provide coherence to the educational experience at Kean College regardless of academic specialization.

STUDENT PROFILE

Kean College has an undergraduate enrollment of just over 11,000 students and a graduate enrollment of almost 1,600 students. Total undergraduate FTEs are slightly above 7,000 and there are approximately 600 graduate FTEs. The mean SAT score of regularly admitted freshmen is 886, above the mean score (876) for all New Jersey college-bound high school seniors. Mean high school rank for regularly admitted freshmen is between the 60th and 61st percentiles. During the next three years the College anticipates that its currently budgeted enrollment of 7,749 FTEs will decline to 7,400 FTEs in FY 1988. Although the data to follow indicate the range of the College's diverse student population, most students are of traditional college age (primarily from urban ethnic backgrounds), and full-time.

There are a greater number of females than males in Kean College's student body. While among the full-time undergraduates there has been a substantial increase in the number of male students (to the present 46%), women continue to dominate the numbers of part-time undergraduates (62%) and graduate students (74%). With the increase in part-time students the age of the typical undergraduate continues to rise. Currently, 40% are 25 years of age or older. A substantial difference is evidenced in the ages of full-time students (17% over age 24) and part-time students (69% over age 24). In the freshman class which entered the College in September 1984, 89% were under 20 years of age.

Black students comprise 11.7% of the full-time undergraduate

students and about 9.5% of both the part-time undergraduate and graduate populations. The largest number of black students comes from Essex County, with the immediately surrounding Union County placing third, after Middlesex, Hispanic students represent 10.2% of full-time undergraduate students, 9.7% of part-time students, and 7.8% of graduate students. Percentages for Hispanic students have risen steadily in recent years, a reflection of the growing Hispanic population in New Jersey (and in the City of Elizabeth in particular).

Full-time and part-time students at Kean College are different in several respects. Part-time students are older, more likely to be female, white, and live closer to the College. Their academic interests parallel those of full-time students. These interests tend to correspond to national trends. Enrollments in traditional liberal arts programs are mixed, enrollments in programs which have the promise of more direct career opportunities are up sharply.

The economic profile of Kean College students bears illustration. A striking statistic comes from data supplied by the College Board on the economic background of New Jersey students who took the SAT examinations in 1984. Of white students who had SAT scores sent to New Jersey colleges, the mean parental income was $43,100. In contrast, the mean parental income of white students who sent SAT scores to Kean College was $33,200. Of black students who sent SAT scores to New Jersey colleges, the mean parental income was $21,400, while that of those sending scores to Kean College was $15,900. The same figures for students of Puerto Rican background were $18,100 and $13,400. These data not only

demonstrate that Kean College students as a whole come from poorer families than New Jersey college students generally, but also give dramatic evidence of economic hardship faced by minority students who seek equal opportunity in America.

A recent study by the American Council on Education, Access to Higher Education: the Experience of Blacks, Hispanics, and Low Socio-Economic Status Whites, demonstrates that socio-economic status (and attendant academic preparation) remains a major factor in access to higher education and in student persistence. For example, only 28% of low income whites, 30% of Hispanics and 37% of blacks were in college two years after graduating from high school. In contrast, 60% of higher income white students were in college.

Kean College is proud of the opportunities it provides to minorities and to economically and educationally disadvantaged students. During the first year of enrollment (when students are traditionally at greatest risk), minority students had retention rates that were generally equal to or slightly higher than for all students for each of the College's three freshman admission categories (regular admission, special admission, and E.O.F.). For example, the first year retention rate for regularly admitted black students was between 68% and 72% (for cohorts entering the College in Fall 1981, 1982, and 1983), which equaled the retention rate of all regularly admitted students. The College's Exceptional Educational Opportunities Program (described in the next section), through which approximately 17% of the College's freshman class is admitted, specifically serves underprepared and economically disadvantaged students. In contrast to a 28% two-year national

retention rate for white students cited by the American Council for Education, the two-year retention rate for all E.E.O. racial groups exceeds 40%. While pleased with this record, Kean College is convinced that a potential for greater success can be realized in the years ahead.

ACCESS PROGRAMS FOR SPECIAL STUDENT POPULATIONS

Promoting access for those who can benefit from the opportunity for higher education is an integral part of the mission of Kean College. This commitment is evidenced by the variety of programs and services that the College offers. The College's EEO (Exceptional Educational Opportunities) Program, through which financially and educationally disadvantaged students identified as having the potential to succeed in college are admitted and then assisted through an array of supporting services, include tutoring, counseling and financial aid. This program provides opportunity for substantial numbers of minority students.

Another thrust of the College's commitment to access is represented by the tradition of providing an opportunity for working adults to continue their education and to seek the career advancement that frequently accompanies attainment of a baccalaureate or advanced degree. The large majority of the College's part-time students enroll in classes that meet during evening hours and on Saturdays.

A fundamental component of the commitment to access at the College is the Developmental Studies program, through which instruction is required in writing, reading, and mathematics for students whose scores on the New Jersey College Basic Skills Placement Test indicate a need for placement in basic skills courses in any of these areas. Development of an effective set of these courses has continued for a period of nearly ten years, and the success of the current program is reflected by the fact that students who require and successfully complete developmental work

have higher retention rates than students whose test scores do not indicate a need for developmental work.

Another access program unique to Kean College is the Spanish Speaking Program, which offers General Education courses taught in Spanish, thereby enabling Hispanic students to begin college work in selected courses while they are developing the requisite proficiency in the English language.

The College also offers a comprehensive program in ESL that provides for assessment of competency in English and an array of courses designed to help the student develop skills in English that are essential for pursuit of any degree program at Kean College. The College provides courses for approximately 120 students with Asian, African, and Latin American backgrounds in its ESL program.

The External Education Program allows students who are unable to attend classes that meet regularly to enroll in courses designed to be completed on an external basis. This flexible scheduling provides an alternative for individuals who are employed full-time during the day, or work split shifts, to pursue a degree.

The College also offers special services to students who wish to return to college after a long hiatus in their education and provides support programs for older students who wish to begin a college education during their middle or advanced years. The EPIC Program offers counseling aimed at helping such students adjust to the college environment and at identifying appropriate career opportunities.

ACADEMIC PROGRAMS

School of Humanities, Social and Administrative Sciences

The School of Humanities, Social and Administrative Sciences houses ten academic departments with bachelor's and master's level programs in the traditional liberal arts and in career disciplines. In addition to its major academic programs, the School provides the greatest part of the instruction in the General Education Program at the College.

Bachelor of Arts degrees are offered in the traditional areas of the Humanities, Fine and Performing Arts and the Social Sciences. These programs have been designed to provide students with the basic liberal education and intensive specialized education to prepare them for further study or employment in the arts, business, government, public service, and teaching.

In an effort to address the changing human resource needs of employers in the region the College has introduced professional programs in Accounting, Fine Arts, Management Science, Public Administration and Social Work. An important characteristic of the career related programs in this School is their attachment to a traditional liberal arts discipline (e.g., Management Science and Economics, Public Administration and Political Science). Such affiliations ensure that professional preparation is integrated with an appropriate theoretical framework and supported by an extensive background in the liberal arts.

At the graduate level the School has traditionally offered master's level programs in Fine Arts and the Behavioral Sciences as well as a post-master's certificate program in School Psychology. In recent years Master of Arts in Liberal Studies and

Master of Public Administration programs have been introduced. In September 1985 a new graduate program, a Master of Science in Management Systems Analysis, which is housed in the Department of Economics, Geography, and Management Science and offered jointly with the Computer Science Department will be initiated.

All programs offered in the school are subject either to Kean College's cyclical evaluation procedures or to review by an external accrediting body.

School of Education, Technology, and Related Professions

The School of Education, Technology, and Related Professions houses six academic departments with bachelor's and master's level programs for the preparation of teachers and education service personnel, middle-management personnel for industry, recreation and physical fitness specialists, and related professional fields.

At the undergraduate level, degree programs are offered in Early Childhood Education, Elementary Education, Education of the Deaf and Hearing Impaired, Bilingual Education, Alternative Corrections, Health and Physical Education, Industrial Education, Speech Correction, and Teacher of the Handicapped. These programs have been modified to respond to teacher education standards adopted in 1982 and revised in accordance with more recent recommendations by the New Jersey Boards of Education and Higher Education. Changes in both curricula and admission, retention and graduation standards were made.

At the graduate level, M.A. programs are offered in Educational Administration, Counselor Education, Special Education, Instruction and Curriculum, Early Childhood and Family Studies, Reading Specialist, Basic Skills Specialist, Bilingual

Education, Instruction and Curriculum, Early Childhood and Family Studies, Reading Specialist, Basic Skills Specialist, Bilingual Education and ESL instruction.

The Educational Administration and the Instruction and Curriculum programs are currently undergoing major curriculum revisions to meet the changing needs of the profession. All education programs are approved by the National Association of State Directors of Teacher Education and Certification (NASDTEC) and the National Council for the Accreditation of Teacher Education (NCATE).

In addition to the programs in education Kean College offers a B.S. in Technology with options in Design, Electronics, Electrical Contracting, Graphics Arts, Manufacturing and Mechanical Contracting. These latter programs are designed to prepare individuals for technical-managerial, production-supervisory and related types of professional leadership positions. The Technology programs, fully accredited by the National Association of Industrial Technology, continue to attract increasing numbers of majors.

An undergraduate degree program in Urban and Outdoor Recreation and graduate programs in Communication Sciences and Speech Pathology and Audiology are also offered.

School of Natural Sciences, Nursing and Mathematics

Kean College offers baccalaureate programs in mathematics and in the natural sciences, including those in Biology, Chemistry, Chemistry-Physics, Earth Science, Geology, and Meteorology. The major purpose for which undergraduate programs in the natural sciences at Kean College are designed is to prepare students for

graduate study and positions in industry or government that require a scientific background. There are also major programs (Biology and Chemistry) that prepare students for professional schools (medicine, dentistry, and related fields) and major options in all three sciences and mathematics that are specially designed for students seeking teacher certification. There is a movement toward establishment of accreditation standards in nearly all the scientific professions. The departments concerned and the College as a whole are committed to meeting guidelines that are set by the professions; the B.S. in Chemistry is already accredited by the American Chemical Society.

The second largest major program at the College is that in Computer Science; this program has focused since its inception in the early 1970s on preparation of students for entry-level positions in data processing and computer technology. In the Fall of 1984 the program was revised in response to advances in computer technology and the concomitant changes in the type of preparation needed by our graduates. The College has made application for the track in Technology and Science to be accredited by the Computer Science Accreditation Board.

At the graduate level, the Department of Mathematics and Computer Science is sponsoring jointly with the Department of Economics and Management Science a program leading to the degree of Master of Science in Management Systems Analysis, a new program opening in the Fall of 1985.

Kean College offers programs in Medical Record Administration, Medical Technology, Nursing, Occupational Therapy, and Physical Therapy and is the State College that is recognized for educational programs in health care. The programs in Medical

Record Administration, Occupational Therapy, and Physical Therapy are the only baccalaureate level programs in those fields in the State. The Nursing program offers registered nurses in the region the opportunity to earn the B.S.N., the degree that is now recognized by the profession as necessary for entry-level professional practice. Health care programs offered by the College are fully accredited by the recognized accrediting agencies. These programs are highly competitive, with admission limited by the availability of sites for clinical training. All of the initial Medical Record Administration graduates passed the National License Examination in September 1984.

A FRAMEWORK FOR SHARED GOVERNANCE

INTRODUCTION

In the years ahead, institutional governance issues can be expected to influence the success with which the College's strategic goals are achieved. Perhaps the broadest issue of academic leadership, which has received considerable and widespread attention, has been identified by the Carnegie Foundation's report, The Control of the Campus, as the need to strike an appropriate balance between the "twin obligations of institutional integrity and public accountability."

It is clear that the governance context is fundamental, for the College's "path to excellence" is in the long run determined not only by the formal arrangements by which the institution carries on its work, but also by the informal procedures by which standards are maintained. In the words of the Carnegie Foundation report, the "task of governance is to sustain and strengthen the essential core," that is to say, teaching and encouragement of student learning and growth.

ACCOUNTABILITY AND AUTONOMY

The concept of accountability requires that those who make decisions (or provide services) be answerable to those who support them and those who are affected by them. Accountability entails that decision makers or service providers explain and, where appropriate, defend what they do.

academically talented seniors; arrange for on-campus utilization of library, computer labs, and recreational facilities.

3. Recruitment of academically talented transfer students from community colleges.
4. Expanding the number of honors offerings available to academically talented undergraduates.

C. Increase Opportunities for Older Students

Kean College's historical commitment to providing educational opportunities for older (40% of its undergraduates are 25 years of age or older) and part-time students (currently 48% of undergraduates) responds to a projected pattern of growing need in the region served by the College. In the next three years the College will enhance graduate program standards and intensify its recruitment efforts in order to attract men and women seeking new skills to enter the work force.

D. Improve Student Retention

The College has appointed a Special Assistant to the President for Student Retention to coordinate efforts in this vital area. The College's recent record in improving the first year retention rate (when students are at greatest risk) from 68% to 72% will be further strengthened by the establishment of a Freshmen Center as well as an array of initiatives which include a projected one credit orientation course mandatory for all freshmen and improved student life and advisement programs. Because persistence and performance among freshmen taking advantage of current programs have significantly increased, these initiatives are expected to improve academic performance among undergraduate students on all class levels. Establishment of an enriched General Education

In contrast, institutional integrity refers to a venerable tradition of collegiate autonomy and faculty self-governance and embraces the essential functions that relate to the central teaching mission of colleges and universities: the content of courses, the process of instruction, the establishment of academic standards, and the assessment of student outcomes.

The principle of faculty participation in collegiate governance was articulated with great clarity almost two decades ago (1966) when the AAUP, the American Council on Education, and the Association of Governing Boards of Universities and Colleges issued its Statement on Government of Colleges and Universities:

> The faculty has primary responsibility for such fundamental areas as curriculum, subject matter and methods of instruction, research, faculty status, and those aspects of student life which relate to the educational process. On these matters, the power of review or the final decision lodged in the governing board or delegated by it to the president should be exercised adversely only in exceptional circumstances, and for reasons communicated to the faculty.

The integrity of the essential academic core, including assessment of student outcomes, thus requires extensive faculty participation and self-regulation, although subject to review and accountability at broader levels of institutional responsibility.

The major vehicle of faculty representation in institutional governance has, historically, been the Faculty Senate and evidence clearly suggests that the Senate as an institution for faculty representation continues to thrive. However, since the time of the 1966 Statement, the faculty and professional staff at Kean College have become unionized and are represented by an elected bargaining agent. The principle of faculty participation in institutional governance has, while still subject to rigorous review and accountability, thus been provided with additional and at times

alternative structures and processes for implementation.

THE MORAL BASIS OF SHARED GOVERNANCE

In a recent work [The Effective Administrator: A Practical Approach to Problem Solving, Decision Making, and Campus Leadership], Donald E. Walker identified the link between the moral dimension of shared governance in the academy and its practical results:

> At the heart of the moral vision of the university is the centrality of the individual. The belief that operates as a conscious and unconscious dynamic is that the individual celebrating his or her own intelligence through industry informed by moral vision will make the best contribution to the university and to the world. People are regarded as more important than procedures.
>
> There are also implications for [decision making] style in a stress on the grass-roots problem solving. Again, the more the individual affected by a decision can be involved in that decision, the better it will "stick." Decisions reached at the lowest possible level acquire added validity because there is a moral rightness about them. The recognition of the moral quality of the decision-making process in a university makes understandable many phenomena of campus life that are [not] otherwise comprehensible.

Past history at Kean College provides substantial evidence that when affected constituencies participate in governance processes, they are likely to support the results of those processes. As Roger Fisher and William Ury point out in their recent work on effective negotiations: "Even if the terms of an agreement seem favorable, the other side may reject them simply out of a suspicion born of their exclusion from the drafting process. Agreement becomes much easier if both parties feel ownership of the ideas."

THE SCOPE OF SHARED GOVERNANCE

Shared or participatory governance at Kean College includes numerous constituencies: Faculty Senate, Union, student organizations, minority constituencies, department chairpersons, deans, program coordinators, and members of academic disciplines. A major policy initiative, such as implementation of value-added approaches and methods, requires that those who are substantially affected by a decision (or those who must implement that decision) be consulted and included in decision making. The process of participation thus entails consultation (including discussion and negotiation), the forging of consensus, the decision itself, and implementation.

It is important to note that participatory governance does not entail that every item of college business be subject to student and/or faculty vote. Rather, the concept of shared governance embraces the view that those who are substantially affected by decisions have some significant authority as to how those decisions are made. The actual degree of authority will vary according to constituency and circumstance, and major responsibility for certain decisions rests with the administration. But as a general proposition, shared governance in the academy accepts the view that participation of autonomous moral agents in decisions which affect them increases the likelihood that those decisions will be more effectively implemented.

GOALS OF SHARED GOVERNANCE

Apart from its obvious moral or ethical dimensions, shared

governance creates a context in which those who must implement decisions (or who are affected by them) are more likely to support those decisions. The ultimate aim, therefore, is initiative and effective forward movement of the institution, particularly as it relates to the essential academic core of teaching and student learning.

Participation in institutional governance (whether formal or informal) is, in operational terms, thus a unifying concept which integrates process and achievement. Through the building of coalitions among affected constituencies, a base of institutional support for initiatives in several critical areas has been developed at Kean College. Recent initiatives have included reorganization of the College's academic structure, a major revision in the program of General Education for all undergraduate students, strengthening new technologies (particularly in the form of microcomputer applications across the disciplines), professional recognition and accreditation of programs in the health professions, a revised and strengthened baccalaureate program in computer science, initiation of the Master of Science program in Management Systems Analysis, major accomplishments in faculty retraining for teaching in career and technologically-based disciplines, and selection of several highly talented individuals to fill senior academic administrative positions.

CAVEATS

Participatory governance tends to work best with students, faculty and administrative staff who are deeply involved in the life of the institution and who are committed to its goals. Those who are relatively uninvolved will be less engaged by a process of

participatory governance unless affirmative and vigorous steps are taken to encourage such individuals to identify with the cultures and goals of the campus. At Kean College, this remains an important undertaking for the years ahead.

In addition, participatory governance is a difficult, lengthy and sometimes tedious process. Consultation, discussion, negotiation, and the forging of consensus among affected parties is inherently more complex than simply issuing orders in a hierarchical and authoritarian manner. However, the additional effort that participatory management requires must be seen as an investment. Its dividends are decisions which have far greater acceptability and support than those which are issued top-down.

ROLE OF THE PRESIDENT

It is widely acknowledged that it is the responsibility of the president to articulate the moral vision of the college or university and symbolize its most fundamental values. On a day-to-day basis, however, the president must employ a practical, participatory, problem-solving approach in order to assure the institution's commitment to real (as opposed to purely symbolic) innovation and excellence. Walker notes that the participatory, problem-solving approach is based on the premise that "many problems can be resolved to the mutual satisfaction of the people affected or else that an approach can be made that is close enough to their goals that at least there is acceptance."

> The problem-solving definition of presidential responsibility is more realistic than the hierarchical stereotype of the president as the master decision-maker for the organization. Presidents do, of course, make decisions in the traditional sense. The process deserves discussion. Most effective administrators think of themselves not as responsible for making every decision but as presiding over a

> process. Their job is to ensure that decisions are in fact made, and within ... appropriate time limits. They also pay attention to the procedures by which such decisions are made and the constituencies represented in arriving at those decisions.

COLLECTIVE BARGAINING IN A CONTEXT OF SHARED GOVERNANCE

Background

While the history of faculty unionization in colleges and universities has been detailed elsewhere, it should be pointed out that the rapid growth of collective bargaining over the past decade is largely the result of an increase in faculty dissatisfaction due to changes in the environment of higher education. Reductions of real income as a result of inflation, reduced promotion opportunities, greater difficulty in achieving tenure, actual and projected enrollment declines, and uncertain public support, have taken their toll on faculty morale and esprit de corps. Faculty unions have stepped into the breach, in large part to achieve aims that more traditional methods of collegial and participatory governance seemed unable to provide.

Collegiality

Robert Birnbaum [Creative Academic Bargaining: Managing Conflict in the Unionized College and University] has defined collegiality as "the establishment of interpersonal and intergroup relationships based on a mutual commitment to professional values, civility in interactions, and faculty influence in the decision-making process." The tradition of collegiality at Kean College has provided a potent basis for transforming less constructive forms of collective bargaining behavior into patterns that strengthen, rather than weaken, institutional effectiveness. As Birnbaum explains:

> There are powerful forces in colleges and universities that

> tend to make collective bargaining in higher education a productive and constructive process. Supporting the development of problem-solving orientations between faculty and administrations at the bargaining table are traditions of joint administrative-faculty participation in decision making, shared values and norms, orientations toward civility and collegiality, administrative participation in faculty roles and faculty support for the performance of administrators, relatively low status differentials and reductions in the differences of power between the two groups, and increased willingness of faculty to confront differences and introduce new points of view because of the security of union representation.

Fortunately, Kean College's tradition of faculty participation in institutional governance has enabled the College to develop, and implement, strategies which effectively respond to the needs of its students. As a result of close cooperation between faculty and administration a period of intense and sustained programmatic growth at the College, followed by reorganization of its academic structure, has been achieved with great success. The urgent task in the years ahead, however, is to demonstrate what is already deeply felt, that the talents of our students are indeed developed and enriched as a result of their educational experience at Kean College.

STRATEGIC GOALS FOR KEAN COLLEGE

I ASSESS AND IMPROVE STUDENT ACHIEVEMENT

During the next three years Kean College will commit substantial resources to build on existing strengths in the area of student assessment and performance measures. Supported by a greatly expanded administrative computing capability, the College will, through its faculty, design and implement a comprehensive system of value-added assessment to monitor each student's intellectual and personal development, to ensure student preparedness for accreditation or registry examinations, and to provide an expanded basis for determining institutional excellence.

For the immediate future the College will focus its value-added assessment efforts in these areas: General education, the major academic disciplines, student life activities, and alumni achievement and satisfaction.

A. The Value-Added Approach

According to the American Association of State Colleges and Universities (In Pursuit of Degrees with Integrity: A Value-Added Approach to Undergraduate Assessment), most institutions of higher education have equated excellence "with the mere pursuit of resources: money, facilities, highly trained faculty, and bright students." However, as Alexander Astin has noted, "the value-added view emphasizes how existing resources are used to enhance student learning" by focusing on how much each student is

actually learning. Value-added calls for development of strategies, methodologies, and techniques to assess the actual extent of change in students (cognitive, attitudinal, and affective) produced as a result of the collegiate educational experience.

As the National Institute of Education's Study Group on the Conditions of Excellence in American Higher Education has stressed, it is crucial that "institutions of higher education produce demonstrable improvements in student knowledge, capacities, skills and attitudes between entrance and graduation." The Study Group concluded that "The use of [periodic] assessment information is an essential ingredient of effective learning and serves as a powerful lever for involvement." The College will implement value-added with these concerns in view.

Alexander Astin's observation (Achieving Educational Excellence: 1985) regarding value-added assessment is worth repeating:

> These assessments are used not to "evaluate" faculty and students but rather (a) to provide feedback to faculty members and departments that can be used to strengthen the academic program and (b) to monitor the impact of efforts to strengthen the academic program and to improve student performance. The university [Northeast Missouri State] has produced impressive longitudinal evidence suggesting that this program has already had a positive impact on student learning. In addition, the program has stimulated a major reexamination and modification of the curriculum, revisions in admissions and grading procedures, improvements in academic advising, greater student involvement in academic and career planning, and greater student satisfaction with the academic program. The university has also established a comprehensive data base and communication system that facilitates the exchange of information among departments about strategies that turn out to be especially effective.

B. Academic Programs

In September 1985 a new General Education Program will be introduced at Kean College which integrates an 18 credit interdisciplinary core curriculum with a 34 credit distribution requirement. The objectives of the program include acquisition of a defined body of knowledge as well as specific competencies that are required for success in the specialized study of the major disciplines and which should be attained by all graduates of the College.

For General Education and the major academic disciplines, value-added assessments to measure levels of student performance will be designed and implemented by the faculty. Guidelines to facilitate this process will be developed by the Faculty Senate. The assessments adopted will reflect the knowledge and skills objectives of the curriculum and the variety of learning styles present among students. The assessment of student performance will indicate levels of student competence on entrance to the General Education or academic major program and serve as benchmarks against which the program's impact will be measured. Assessment results will be used to determine whether the curriculum is actually achieving stated goals and objectives as well as serving as a basis for measuring subsequent improvement of student performance.

C. Academic Support and Student Life Programs

One of the most important aspects of value-added is its ability to measure student growth derived from non-classroom sources. Cultural activities, concerts, lectures, workshops, conferences, and other student life programs, as well as

utilization of the Library and Instructional Resource Center, directly and indirectly complement the student's classroom experiences. Student participation and interaction in these activities provide a unique perspective and have the potential to enrich the overall educational process. Through systematic and regular use of standardized survey instruments, the College will be able to measure the quality of student experiences outside the classroom. Building on the College's existing survey data base, periodic surveys will be made of all students to evaluate the College's contribution to students' academic progress, personal growth, and overall satisfaction.

D. Survey of Kean College Alumni

The systematic survey of alumni will assist in addressing questions about the long range value of a Kean College education. The experience of most institutions is that alumni more readily respond to surveys than to tests. Therefore the College will continue its triennial alumni survey (scheduled next in Spring 1986) with a focus on measures such as; income; occupation; organizational memberships; community participation; honors achieved; satisfaction with the educational experience at Kean College; and subsequent educational experiences. Measurements obtained from alumni will, insofar as data permit, be directly compared to measurements obtained from that same cohort while they were students at the College.

II. IMPROVE ACCESS AND PERSISTENCE

Kean College has a long standing commitment to providing educational opportunities to a diverse student population. Special efforts will be made to improve recruitment of traditional age students, minority students, older and part-time students, honors students and graduate students. Furthermore, the College will enhance and improve the quality of students services and support systems to ensure that students will have the maximum opportunity to complete their educational goals. Efforts to improve student persistence especially among freshmen will be strengthened.

A. Increase Opportunities for Minority Students

A major objective is to continue to provide access to higher education for minorities who reside within the region served by the College. Recruitment activities through the Admissions Office, the EEO Program, and through collaborative activities with ASPIRA and related organizations will be intensified.

Hispanic enrollment at Kean College has been increasing and is currently 10.2% of full-time undergraduate enrollment. In contrast, overall enrollment of black full-time undergraduates at the College had been declining (from 13.6% in 1981 to 10.9% in 1983); recently it increased to 11.7% in 1985. Black enrollment among regularly admitted first-time full-time freshmen, however, has continued to decline. Special attention to this issue has been the focus of the Kean College Task Force on Black Student Enrollment, appointed by the President in April 1985. Increased minority enrollments will result from the implementation of the following:

* Meeting recruitment goals for regularly admitted black

students: Fall 1986, 6.5%; Fall 1987, 9%; Fall 1988,12%.

* Obtaining an increase in the maximum percentage of specially admitted first-time freshmen from 10% to 15% in order to increase the percentage of educationally disadvantaged minority students who do not qualify for E.O.F. admissions because they exceed existing income criteria ($13,670 or more for a family of four). An increase to a 15% special admissions category would be accompanied by a requirement that least one-half be minority students.
* Undertaking recruitment and student life initiatives to ensure that Kean College continues to provide educational opportunities to members of New Jersey's Hispanic population.
* Increasing the number of minority students in programs which traditionally have had low minority representation to levels consistent with overall minority levels at the College.

B. Increase Opportunities for Honors Students

Recent efforts to attract academically talented high school seniors to Kean College have included honors sections of courses at the freshman level and a series of special events to confer recognition on students who are designated as Kean Scholars. Several strategies have been planned to strengthen this effort in the next three years:

1. Recruitment of academically talented high school juniors/seniors by personal contact of individual faculty.

2. Provide freshman courses in school districts to

Program, beginning Fall 1985, is also expected to have a positive impact on student retention, particularly as a result of increased student involvement through a program of planned co-curricular activities such as lectures, concerts, and visits to cultural centers.

Impetus for the establishment of a Freshmen Center came from recommendations of the College's Retention Task Force. The Center which will become operational in the Fall of 1985, will coordinate and systematize the diverse services and programs offered to entering students. The goal is to increase the first year retention rate of regularly admitted students to 85% by FY 1988.

E. Strengthen Student Access and Support

Continued strengthening of its Developmental Studies program, which makes course work without college credit mandatory for all entering students found deficient in the basic skills of reading, writing and elementary algebra, remains a priority commitment for the College. Pre- and post-test assessment of students completing this program presents strong evidence that the College has been successful in providing skill-deficient students with a sound and comprehensive foundation for success in college. Students who successfully complete non-credit development courses continue to demonstrate, through such value-added indicators as grade-point average, credits earned, and success in specific college-level courses, that they are able to persist and perform well in their chosen programs of study.

During the 1980s, the College has continued to attract a substantial number of full-time transfer students. This is due to continuing efforts to improve articulation with neighboring county colleges as well as to programmatic offerings which are

particularly attractive to transfer students, such as Nursing, the Health Professions, and Accounting.

In order to provide opportunities in strengthened and enriched graduate offerings, Kean currently is completing a comprehensive review of its graduate programs. However, enrollment in new programs such as the Master of Public Administration and the recently approved Master of Science in Management Systems Analysis, revisions of existing professional education programs (such as the Master of Arts in Educational Administration) and strengthened recruitment and admissions procedures are beginning to offset a portion of the decline and stabilize graduate enrollment.

Further, the College's commitment to providing access to physically disabled students has provided an opportunity for expanded utilization of campus facilities by increasing numbers of handicapped students. Continuing progress in responding to the recommendations of the Handicapped Students Task Force is expected.

Finally, Kean will continue its commitment to enrollment of senior citizens. The senior citizen population in the region continues to grow, with a corresponding increase expected in their participation in formal classroom instruction and attendance at the College's various social and cultural events open to the community.

F. Strengthen Computing Support Services

The College, in June 1985, purchased a Prime 9955 minicomputer and "Colleague" an integrated data base management system, at a cost of approximately $580,000. The Colleague software program, which will be implemented locally on the Prime 9955, will enable

the College to dramatically improve the level of academic support services provided for students.

The Colleague system is an integrated and comprehensive application package which supports and links admissions, financial aid, advisement, registration, student affairs, housing, business services and alumni files and information. Once an information entry is made it allows all users of the system, with appropriate security authorization, to access that information. The system will allow the College to follow the activity and academic progress of a student from the point of application to graduation. It will ease and facilitate the ability of faculty members, academic advisors and other support staff to monitor and assist students with their academic program goals and objectives. Further, the program will considerably enhance the capability of the College to conduct sophisticated institutional research studies and thereby assist in the development of strategies aimed at improving student performance and persistence.

III. IMPLEMENT GENERAL EDUCATION AND STRENGTHEN ACADEMIC MAJORS

Excellence throughout its academic programs is a major goal of Kean College. The College plans to pursue several strategies during the next three years to insure quality and currency across the curriculum.

In the fall 1985 semester, the College will inaugurate a new General Education Program. Initially supported by the National Endowment for the Humanities, the program is designed to enrich and provide greater breadth to the requirements of all baccalaureate major programs.

As a result of an intensive development effort during the past decade, the College now offers an array of professional programs at the baccalaureate level as well as traditional liberal arts programs. In its ongoing effort to meet regional and state social and employment demands the College will continue to develop new programs and program options for which there is clear need and which fall within the College's capacity to mount.

The College has in place and will continue its periodic external evaluation of academic programs. Special emphasis will be placed on keeping programs current, by ensuring that they meet the latest professional and disciplinary standards, that they introduce students to the newest state of theory and knowledge in the field, that they incorporate international perspectives, and that they provide students with the most up-to-date technical competence.

Finally, the faculty and staff of Kean College recognize that academic programs across the various disciplines must take into account the changes in the nature of work that are being wrought

by computer technology. Computer applications therefore will be built into curricula throughout the disciplines, so that every graduate will be able to function within a work or advanced study environment for which computer competence is prerequisite.

A. General Education

The new General Education Program combines an 18 credit interdisciplinary core curriculum with a 34 credit distribution requirement. The primary goal of the new Program is to establish a broad liberal arts education as the common foundation for specialized study in the major disciplines.

The core curriculum, mandatory for all students, has been specially designed to strengthen the integrity and coherence of the baccalaureate degree through six interdisciplinary courses which span the traditional humanistic disciplines. The new 34 credit distribution requirement will broaden and deepen students' understanding of the arts and sciences through introductory and intermediate-level courses distributed among the humanities, the natural sciences, social sciences, mathematics, and health and physical education.

A critical element in the General Education revision is a Special Programs supplement to the core curriculum, including campus-wide lectures, discussion forums, exhibits and performances presented by the College and built around the subjects and themes of the core courses, and organized visits to museums and other cultural resources. The objectives are to increase student involvement in the cultural life of the College and to encourage a greater intellectual bond between students and faculty.

Implementation of the new General Education Program has been funded by a $194,000 grant from the National Endowment for the Humanities (with an additional $50,000 available if matched) and by a $33,000 Humanities Initiative grant from the New Jersey

Department of Higher Education. These grants supported a Pilot project offering two sections of each course in the core curriculum during the 1984-85 academic year. The focus was on developing and evaluating course materials and teaching strategies in a controlled setting. In addition, a series of training seminars for 60 faculty who will be teaching in the core curriculum was carried out during the spring and summer of 1985. Strategies for building students' skills,confidence, and motivation were emphasized during these sessions along with course content and teaching materials. During the Summer 1985 a microcomputer lab (25 Zenith IBM compatible computers plus 5 printers) will be installed for use in FY 1986 for faculty training and development of computer modules in General Education core courses.

Over the next three years, the College's General Education objectives include the following:

* Training an additional 60 faculty to teach in the interdisciplinary core program. This will involve on-going faculty seminars focusing on: introducing computer applications into core courses; introducing critical thinking and problem-solving; integrating special cultural programs into core courses; aqnd establishing a second microcomputer lab in F.Y. 1987 for use in the core curriculum.
* Each liberal arts department will, within criteria established by the General Education Committee, identify appropriate lower division courses that satisfy the breadth (distribution) component of the General Education Program.

* Establish value-added methods to assess the General Education experience for students (both core and breadth).
* Continue to develop and refine General Education courses and undertake a formal evaluation of the entire core program in Spring 1988.

B. Development of New Programs

1. School of Humanities, Social, and Administrative Sciences

During the next three academic years, program development in the School of Humanities, Social, and Administrative Sciences will focus on reshaping several existing undergraduate programs and introducing program concentrations in two graduate areas.

Two programs which now exist as options within other academic majors will be developed as discrete degrees. In both instances the establishment of separate academic programs represents planned development in areas of traditional strength. The College is currently seeking approval for a Bachelor of Fine Arts degree with options in interior design, studio arts, and visual communications. Approval also is being sought for a Bachelor of Arts degree in Speech Communication/Theatre. This curriculum now exists as the Speech/Theatre/Media option under the B.A. in English major.

The College offers both the bachelor's and master's degree in Public Administration. Plans are currently under way to make available to students a combined five year program, at the completion of which students would earn both the B.A. and M.P.A.. At the graduate level in Public Administration, the next two years

will see the development of a health care administration concentration. M.P.A. courses will also be mandatory for the revised program in Educational Administration.

During this period the specialized areas of the new M.S. in Management Systems Analysis will be developed. The introductory core courses will be offered during the 1985-86 academic year. The program design calls for advanced concentrations in operations research, marketing, finance, data communications, and data base design. A time table for option development will be determined after a needs/interest assessment is conducted with students who enter the program in September 1985.

2. School of Natural Sciences, Nursing, and Mathematics

During the next three years, program development within the School of Natural Sciences, Nursing, and Mathematics will focus on master's level programs for health care professionals.

There is a general recognition by the major health disciplines that baccalaureate education does not provide sufficient opportunity to achieve the goals of a liberal education as well as those of professional practice. It is expected that a minimum of a master's level preparation will be required for professional practice in health care in the future.

Kean College offers the only baccalaureate level programs in the State in the areas of Physical Therapy (in collaboration with the University of Medicine and Dentistry), Medical Record Administration, and Occupational Therapy, and has, in addition, strong programs in Medical Technology and Nursing. Given this array of programs and the trend within the health disciplines to establish professional credentials at the master's level, an

objective for Kean College in the next three years is to plan for and begin development of an appropriate array of master's programs for health care professionals.

The professional organization in Physical Therapy has approved a requirement that the Master's degree (or a post-baccalaureate certificate) be the entry level credential for the profession beginning 1990. Development plans for a graduate program in physical therapy therefore already have begun and will proceed rapidly during the next three years. The faculty in Nursing and Occupational Therapy also have begun to study the feasibility of implementing graduate programs in their respective areas.

3. The School of Education, Technology, and Related Professions in order to meet changing professional standards and emerging needs will consider several new program options.

A major goal at the graduate level is to develop and implement a program for students who seek provisional certification through the alternate certification route. Present M.A. programs in Elementary Education and Early Childhood Education will be revised with options in pre-service and in-service training and a major focus on field-based instruction. The feasibility of programs leading to the M.A. degree in instruction in major subject areas within the humanities, natural sciences, and social sciences will also be considered.

C. Strengthening Existing Programs

1. School of Humanities, Social, and Administrative Sciences

In most areas in the School, curriculum efforts over the next three years will center on evaluation and enhancement of existing programs. Each program offered within the School is subject to review by an external accrediting body or the periodic external evaluation procedures of the College. The primary focus of programmatic review in the immediate future will be to ensure that every curriculum in the School is coherent, current, and of high quality and that the faculty in each program are expert and up to date in their areas of specialization. An important direction in each discipline will be the broader introduction of appropriate computer applications.

There are two areas in the School where special needs have been identified: the fine and performing arts and management science. In the first of these where the College offers majors or major options in Fine Arts, Music, and Speech/Theatre/Media there is need to refine the curriculum, replace or purchase equipment, and improve facilities. It is essential that students in these fields of study develop competence in the use and application of current equipment, techniques, and technology.

The Management Science program enrolls over 1600 students. With an additional 187 majors in Economics and 358 in Accounting, the Department of Economics, Geography and Management Science has extraordinary requirements for instructional, advisement, and secretarial support. There has been substantial improvement in the resources allocated to this department in the past year, and this will continue into the future.

Except for the introduction of a separate major in Accounting

in 1982, there have been no significant modifications in the Management Science Program for 12 years. The faculty has recognized the need for strengthening of the program, as has the curriculum advisory sub-committee of the Campus Business Council which reviewed the curriculum during the spring 1985 semester. There is also general agreement with the conclusions of the Business-Higher Education Forum of the American Council on Education, which has urged business programs to stress the development of student communication and critical thinking skills. Thus the College will revise the Management Science curriculum, building on the strong liberal arts/skill development aspects of the General Education Program.

2. School of Natural Sciences, Nursing, and Mathematics

Attention during the next three years will be given to strengthening three broad areas in which programs are offered within the School: Computer Science and Mathematics; the Natural Sciences; and the Health Professions.

Computer Science and Mathematics Kean College is responding in several ways to the impact of the computer and computer technology on academic programs. One response, described in another section of this document, relates to adapting curricula in nearly every program at the college to incorporate those computer applications that are appropriate within the discipline. This response is designed to ensure that graduates are equipped to utilize computers in their environments.

Baccalaureate programs in Mathematics and Computer Science recently have been revised to meet the needs of students, changing technologies, and accreditation standards. In addition, an option

within the Computer Science major that focuses on the use of the microcomputer is under development, in response to needs of the businesses and industries within the area served by the College.

Programs in the Natural Sciences The departments of Biological Sciences, Chemistry-Physics, and Geology and Meteorology comprise the natural sciences at Kean College. They provide support for the General Education Program, for a variety of other majors requiring a knowledge of one or more of the basic sciences, and the programs in health care.

The most significant direction for these departments for the immediate future will be to enhance their strong, major programs. Keeping current is a constant imperative for degree programs within the natural sciences; meeting that need and identifying and pursuing particular emphases in each major will be stressed. The programs in all three departments have been reviewed within the past two years by outside evaluators, and the plans of the departments for the immediate future reflect those evaluations.

The location of Kean College in an industrial area has facilitated the placement of graduates and the type of interaction between industry and the College that helps keep curricula up to date. The Department of Biological Sciences has selected biotechnology as a direction and is building an option within its undergraduate major that should soon furnish graduates who can assume positions in this field. Environmental issues furnish another direction that all three science departments have addressed and will continue to do so. A vital aspect of keeping current is ensuring that the science curricula incorporate state-of-the-art equipment, ranging from spectrophotometers to

weather radar. Provision of such equipment therefore will be a primary focus of curriculum enhancement.

Programs in the Health Professions Each of the baccalaureate health care programs now offered by Kean College is fully accredited by the recognized accrediting agency. The major priority for the future will be to ensure that accreditation is continued and that these programs are meeting the needs of health care institutions in New Jersey and opening opportunities for Kean College students to enter the health professions. The College will also encourage the team approach to foster interaction among campus health care professionals. Specific activities will include the establishment of a health care clinic and sponsorship of programs conducive to faculty-student cooperation.

3. School of Education, Technology and Related Professions

In the next three years, the school will concentrate on improvements in its programs through the further integration of computer applications to professional education and technology programs, as appropriate to each specialization, and by the creation of new approaches to the certification and training of school administrators. As a part of this effort an academy for the on-going training of school administrators will be created. The school will also offer a series of workshops designed to assist first year teachers who are graduates of Kean College.

In order to create an enhanced graduate program for the preparation of school administrators, a core of public administration courses, and competencies, will be utilized in a redesign of the program. An Advisory Committee composed of leading professionals in the discipline and chaired by a prominent school

superintendent was appointed in late Spring 1985. Curricula will be restructured to focus on competencies to be developed. Standards for admission and retention will be raised. Faculty and curricula available in similar M.S.programs, such as Public Administration, will be utilized.

In the undergraduate technology program, cooperative education placements will be increased and a closer working relationship with area industry established.

IV EXPAND FACULTY AND PROFESSIONAL STAFF DEVELOPMENT

Kean College has a long standing commitment to the development of its faculty and professional staff. Development efforts have included the establishment of a systematic teaching improvement program (Kean Instruction Team); a program to fund the enhancement of disciplinary expertise or the acquisition of capabilities in a new field (Career Development Committee); a faculty counseling program with special emphasis on the needs of new faculty (Center for Professional Development); a program to review faculty resources and facilitate retraining in areas of high student demand (Human Resources Development Center); and a program to provide computer skills to faculty and staff (Computer Research and Training Institute). Kean College's approach to professional development is characterized by strong cooperation between the administration and faculty. The College has identified three areas of professional development for special attention and funding in the immediate future: achieving teaching excellence, human resource development, and developing computer competency.

A. Achieving Teaching Excellence

The most important objective of the professional development programs available at Kean College is classroom instruction of the highest possible quality. The priority placed on teaching effectiveness is evidenced in all decisions relating to retention, tenure, and promotion of faculty. Such rewards serve to motivate faculty members to continue to develop effectiveness in their classrooms; however, the satisfaction that comes from observing student growth seems to be an even more powerful motivation for Kean college faculty. Classes at the College are small, and

faculty members are able to establish personal relationships with students. In such a setting it is possible to perceive improvements in student performance readily and to recognize the contribution made to individual student's development. The receptivity of the faculty to programs aimed at enhancing teaching effectiveness has made Kean College a leader in the faculty development movement in the State.

Over the next three years the College will build on its long tradition of support for instructional development through the following:

1. Through the Kean Instructional Team (K.I.T.), the Computer Institute and other associated programs, the College will facilitate efforts to improve the quality of instruction. Efforts will proceed in several areas of the General Education core courses, utilizing computers within the curriculum, and improving teaching strategies and techniques within the disciplines.
2. Continue to develop a value-added system to measure students' academic progress, personal growth, and overall satisfaction. The Faculty Senate will be asked to establish guidelines and procedures for the evaluation process. Appropriate groups (General Education Committee, academic departments, etc.) must determine desired outcomes, reasonable time frames for their achievement, and identify and/or prepare measurement instruments (standardized tests, interviews, student and alumni surveys, etc.).

B. Developing Human Resources

Changing student interest in academic programs has presented

challenges and opportunities for the College's faculty and administration. The Human Resources Development Center, a joint faculty-administration body, was established to coordinate the preparation of resident faculty in areas of lower demand to teach in areas of higher demand and need.

Initial efforts centered on the preparation of English and Foreign Languages faculty for teaching assignments in the English as a Second Language Program and in the preparation of faculty from various education fields and from History for teaching assignments in Developmental Mathematics, Reading and Writing.

For selected Management Science and Computer Science courses, resident faculty from other departments, but with related academic backgrounds and interests, have been prepared to teach in high demand areas in two distinct ways:

1. Twelve faculty enrolled in (or have completed) new graduate degrees in either Business Administration or Computer Science areas.
2. A similar number of faculty members have participated in an intensive on-campus graduate level program taught by off-campus and resident specialists in these same areas. After completion of the program, the retrained faculty have been reassigned to teach either the introductory Computer Science programming course or the Personnel Management course in Management Science.

For the immediate future, human resources development will continue to focus on the identification of curricular areas with projected or actual staffing shortages and of faculty who are prepared or have the background to undergo training in order to

teach courses within those demand areas.

The College will also provide additional opportunities for faculty who have participated in such training to increase competencies in the new teaching assignment areas through the use of intensive on-campus Summer Institutes.

A major faculty development effort in the immediate future is preparation of faculty for teaching assignments within the new General Education Core Course area. While faculty generally have the disciplinary expertise to deal effectively with course content, the communications, critical thinking, and student development skills objectives of these core courses will require more specialized efforts from the faculty in order to ensure that course objectives are met. Faculty training will include an intensive program for new faculty, continuing seminars and training meetings for those engaged in the teaching of these courses, and end-of-term evaluation workshops.

C. Developing Computer Competency

In order to facilitate the continued integration of computers and computer based applications throughout the academic disciplines, the College will significantly expand its activities aimed at providing faculty members with educational and training opportunities in computer technology and computer applications. The implementation of an integrated data base management system (IDBMS), expected to be completed by Fiscal Year 1987, for use in the College's administrative areas will also require that professional and non-professional staff members be provided with training in computer technology and applications. These training opportunities will be coordinated by the Kean College Computer

Research and Training Institute and are described in the section following on integrating the computer throughout the College.

V INTEGRATE COMPUTERS IN CURRICULA

The faculty and administration of Kean College are committed to the objective of integrating computer applications throughout the curricula of academic programs at the College. This objective reflects a recognition that computers are being utilized in a growing array of disciplines and professions, and that college graduates in Psychology, English, Education, and Biology as well as those in Management Science, Mathematics, and Meteorology will be in work or advanced study situations in which computers will be important. An educational program that provides a student with in-depth experience with selected computer applications in his or her discipline and a general awareness and appreciation for the place of computer technology in that discipline will be an invaluable background for these environments.

The thrust for academic computing at Kean College, therefore, is toward building a curriculum framework in which students use computers in approaching problems and projects in their major disciplines--an approach in which computer applications are built into the fabric of every academic program, including both traditional and applied majors. This approach to building computer utilization into curricula at Kean College will result in the incorporation of computer applications into courses within each curriculum component or level in all disciplines, such that the complexity of the application grows with the student's sophistication in the discipline. It is recognized that certain specialized programs may require articulation with off-campus data bases. Such articulation will require special purpose computers, modems, and peripherals for the acquisition, processing, display and storage of data. For example, a wealth of geophysical data may

be readily obtained from orbiting satellites. Such data may be utilized in a variety of courses in which environmental concerns are manifest. Other off-campus data bases in industry, government, and educational institutions may be tapped utilizing ordinary voice quality telecommunication networks.

The College commitment to computers in curricula and its plans for achieving this goal is contained in the attached document headed "Academic Computing Plan - Fiscal Year 1986 - Fiscal Year 1988."

KEAN COLLEGE OF NEW JERSEY
ACADEMIC COMPUTING PLAN
F.Y. 1985-86 THROUGH F.Y. 1987-88

INTRODUCTION

There are six primary objectives to the academic computing plan for the three year period F.Y. 1986 through F.Y. 1988. These objectives are purposely broad and interrelated. Additionally, there are discrete elements which are subsumed under the six objectives including telecommunications, information processing, CAD/CAM, C.N.C., and computer based scientific instrumentation, among others.

1. The College plans to provide a high level of support for the undergraduate major program in computer science and the newly approved masters in management systems analysis. The computer science program, initiated in 1972, has been revised effective the Fall 1984 to reflect current and future students needs and meet the accreditation standards proposed by the Computer Science Accrediting Board (C.S.A.B). Plans for the implementation and further development of the graduate level program in management systems analysis are proceeding. This program will build on the existing undergraduate major programs in computer science and management science.

2. The College plans to proceed with the continued integration of computers and computer based applications throughout the academic disciplines. The objective is to have appropriate computer applications incorporated into academic programs and into courses at each undergraduate class level and at the graduate level, in all disciplines. This integration will facilitate the student's understanding of the computer's capabilities, limitations and complexities and that knowledge will grow as one advances in the discipline. Further, computers and computer applications will be part of the interdisciplinary core courses in the newly revised General Education program. This will provide a foundation for understanding and applying computer technology in subsequent courses in the student's major discipline.

3. The College plans to place special emphasis on the uses of computer technology for students majoring in education. All education majors must have a knowledge of (1) computer structure and operation, (2) computer applications and limitations, and (3) a minimal competency in programming.

4. The College plans in F.Y. 1986 to install a campus area network which would use fiber optics as the backbone transport technology. There will be a number of small (different) local areas networks tied into the campus network. This objective which will begin in F.Y. 1986 will be phased in over a period of three years and assumes the technology used in any one local area network may be modified over time, but that the backbone transport technology should be able to accommodate growth and technological change for at least a decade.

5. The College plans to provide a high level of support for the Kean College Computer Training and Research Institute. This Institute, already established, is dedicated to the education and

development of faculty members and staff in the areas of computer technology, information processing, data base systems, computer applications, and telecommunications. There will be opportunities for faculty members, staff and qualified students to engage in research, development and testing as related to current and future projects.

6. The College plans to implement an integrated data base management system (I.D.B.M.S.) which can, once an information entry is made, allow all users of the system to access that information. The I.D.B.M.S. will allow the College to dramatically improve the level of student services in areas such as admissions, financial aid, advisement, registration, student affairs, housing, business services and alumni as well as provide timely and sophisticated research analyses and reports. The system also has the potential to advance institutional efforts in the area of value-added assessments2.

INSTITUTIONAL COMMITMENT

Kean College is firmly committed to the goal of introducing and integrating computing technology into all its academic programs. The College presently enrolls more than 1100 full and part-time undergraduate students in the undergraduate major program in computer science. Several other academic disciplines, including management science, the largest major program at the College, accounting, and technology already require computer science courses as part of their respective major programs. These disciplines as well as the academic programs in the natural sciences (biology, chemistry and earth sciences) have incorporated the use of computers within their own courses primarily through the use of microcomputers. The same pattern is presently being developed in all the disciplines with initial emphasis in economics, political science, sociology, psychology, and fine arts.

STATUS OF FACILITIES AND EQUIPMENT

Kean College is a principal and member of the New Jersey Educational Computing Network (NJECN). The network houses two IBM mainframe systems, an IBM 3033 and an IBM 4381, which the College accesses on a remote basis for both academic and administrative computing. There are 10 terminals exclusively dedicated to academic computing and direct access to the IBM main frames at E.C.N. Locally the College has two Burroughs 1955 (16 bit) minicomputers. When acquired in 1981 one system was exclusively dedicated to the academic program with the second serving both academic and administrative needs. More recently with the acquisition of the two (2) Prime minicomputers, a Prime 2250 (4/83) and a Prime 9750 (11/84) the two Burroughs minicomputers are used exclusively for administrative computing. The two Prime systems, which are excellent interactive, time-sharing systems are dedicated exclusively to academic computing.

The Prime 2250, a 32 Bit minicomputer is configured with 3 MB of memory, 1-158 MB and 2-68 MB Winchester drives. It can handle up to 32 terminals on an interactive basis and is

compatible, through the use of the Prime S.N.A., with the IBM systems located at E.C.N. The Prime 2250 has Basic/VM, LISP, Pascal, Fortran 77, and PLI-subset G. The Prime Macro Assembly, the Source-level Debugger, and EMACS, the extendable screen editor support these standard languages. The College acquired 22 Prime PST 100 Block Mode 15" programmable terminals and a graphics printer with the purchase of the Prime CPU.

The College in November 1984 acquired a Prime 9750 minicomputer. The Prime 9750 can support up to 128 terminals and incorporates leading-edge E.C.L. and pipeline architecture technology. The system is configured with 10 M.B. of memory and 2-315 MB Winchester drives. Additional languages including Cobol 74 and "C" were acquired to complement the languages already licensed by the College under the Prime 2250.
Both Prime systems were purchased under a special program available to four year colleges which allows for a 50% discount.

The Prime 9750 and 2250 minicomputers, and a dedicated IBM microcomputer laboratory are located in the Campus Computer Center and primarily serve the undergraduate major program in computer science and the masters program in management systems analysis.

DISTRIBUTIVE COMPUTING

Kean College's data processing program is evolving in a way that will allow the College to distribute its computing requirements among the New Jersey Educational Computing Network (ECN), the Campus Computer Center and individual academic departments. The concept of distributive computing using local area network LAN's, if developed properly, will allow the College to obtain maximum benefit from its limited financial resources while providing faculty members, students and staff with the breadth and depth of direct computing experiences necessary for a fundamental understanding of the current and evolving computer technology. The experiences during the 1983-84 and the 1984-85 academic years proved both the academic value, and cost effectiveness of using local minicomputers (Burroughs 1955, Prime 9750 and 2250) in an interactive environment complemented by discipline based micro-computers laboratories for many of the courses utilizing computers. The advances in hardware computer technology, particularly in terms of speed, memory, power and application coupled with lower purchase costs have enabled the Colege to place computers and computer technology directly in the hands of faculty members and students. The educational importance and value of having systems hardware in the form of mini-computers and microcomputers located on campus cannot be overstated. The College continues to use the IBM mainframe computers at E.C.N. for statistical programs, advanced courses, large data-base work, administrative tasks, and development projects. There will be a continued need for E.C.N. in these and other areas, particularly telecommunications and project support, and a commitment of College resources to E.C.N. at its current level or beyond for these purposes.

In June 1985 the College acquired a Prime 9955 super minicomputer and the Colleague integrated data base management system (I.D.B.M.S.). The Prime 9955 is the top end of the Prime

line. The system is configured with 10 MB main memory, 1,980,000,000 bytes of on-line disk storage and can support up to 256 terminals. The Colleague integrated data base system is produced by Datatel and includes modules for admissions, registration, financial aid, personnel, general ledger, purchasing, accounts payable, accounts receivable, cash receipts, continuing education, student affairs and housing. Implementation of the system will begin in July 1985 and proceed over a period of 6 to 12 months.

MICROCOMPUTER LABORATORIES -Academic Areas

Eleven (11) microcomputer laboratories each equipped with five (5) to twenty-six (26) microcomputers have been established. Each laboratory is designed to facilitate the incorporation of computer applications in a particular discipline (Public Administration, Accounting, Technology), or discipline cluster (the Social Sciences, the Natural Sciences, Education, and the Arts). Because the focus for each laboratory will be on the integration of the microcomputer into the specific discipline in a way comptabile with the nature and the conceptual framework and methodology of the discipline, the types of applications vary widely. The integration of computer technology into existing programs will improve the quality of instruction by making possible an extension in the depth and breadth of the curricula.

The IBM PC, XT and AT systems (see attached sheet delineating equipment for each discipline area) are well suited for the computer applications that will be taught in courses in the administrative sciences (Accounting, M.P.A., etc.) at both the graduate and undergraduate levels. These systems will also be used in the natural sciences and health professions.

The use of the Apple IIe in the social sciences and education has been demonstrated to be particularly effective. There is a large base of available software relative to the social sciences and education available for the Apple IIe.

The established microcomputer laboratories utilizing Apple IIe and IBM PC systems have provided many faculty members with the opportunity to become knowledgeable and expert with these systems. There is agreement for reasons of educational value, training, and compatibility to have these two systems generally serve as the current standards at the College. The College has, however, more recently purchased I.B.M. (M.S.-D.O.S.) compatible microcomputers, particularly Compaqs and Zeniths for reasons of portability, superior performance and competitive pricing.

I. COMPUTER SCIENCE
Twenty (20) I.B.M. P.C. Systems (4 color-16 monochrome monitors)
Four (4) Epson F.X. 80 printers

II. Management Science (undergraduate majors in management science, accounting and economics)
One (1) IBM XT System
Thirteen (13) IBM PC Systems (4 color - 9 monochrome monitors)

Six (6) Okidata 83a Printers
One (1) Transtar 120 Printer
One (1) Hewlett-Packard Plotter, 6 pens

III. Fine Arts
Thirteen (13) Apple IIe Systems (color)
Two (2) Epson FX 80 Printers
One (1) Hewlett-Packard Plotter, 6 pens
(Associated Video Systems, Cameras, and special graphics equipment)

IV. Social Sciences (Sociology and Psychology)
Twenty-six (26) Apple IIe Systems (monochrome)
Eight (8) Epson FX 80 Printers
One (1) Transtar 120 Printer
One (1) Hewlett-Packard Plotter, 2 pens

V. Natural Sciences (Departmentally based-not in laboratory)
Three (3) IBM AT
Six (6) IBM PC Systems

VI. School of Education
Fifteen (15) Apple IIe Systems
Four (4) Apple Image Writers

VII. Computer Institute - Continuing Education
Eighteen (18) IBM PC Systems
Three (3) IBM PC XT Systems
Twelve (12) Compaq Portable Personal Computers
Two (2) Apple IIe Systems
Four (4) Apple IIc Personal Computers
Two (2) Apple Macintosh Computers

VIII. Technology (Industrial Studies)
Nine (9) Apple IIe Systems
Twelve (12) Microprocessors

IX. Public Administration (master-level and undergraduate major programs)
Two (2) IBM XT Systems
Three (3) IBM PC Systems
Three (31) Epson FX 100 Printers
One (1) Hewlett-Packard Plotter, 2 pens.

X. Developmental Studies (Mathematics)
Fifteen (15) Apple II+ Systems
Four (4) Epson FX 80 Printers

XI. General Education
Twenty-five (25) Zenith 27-151-52 systems

Departmentally Based Microcomputers

The College, in addition to dedicated microcomputer laboratories, has provided a minimum of one (1) microcomputer system for each academic department and academic support program

(ESL, Developmental Studies, etc). These microcomputers are primarily used by faculty members and staff within the departments to develop and experiment on computer applications for courses and programs.

FACULTY RESOURCES - Training and Development

Kean College has in addition to its computer science faculty a number of faculty members in each of the discipline clusters with the knowledge, expertise and desire to initiate the objective of integrating computers throughout the curriculum. As microcomputers become more readily available on campus, all faculty members will have the opportunity to acquire the skills to utilize them effectively in their disciplines. The College conducts on-campus computer workshops for resident and adjunct faculty using the Prime 9750 and 2250 minicomputers as well as the IBM PC and Apple II microcomputer laboratories. Beginning with the 1983-84 academic year the Computer Institute sponsored computer training programs ankd workshops for faculty members and staff on a regular basis. In June 1984 and June 1985 the College conducted separate intensive three-week workshop to train a total of fourteen (14) faculty members to teach the basic level course in computer science. Additionally six (6) faculty members, four (4) from mathematics, one (1) from chemistry and one (1) from Sociology are enrolled in the program being offered at the Stevens Institute for Technology. This program, which is sponsored by the Department of Higher Education is an intensive 15 month program leading to a Master of Science in Computer Science.

The faculty members engaged in these training and development efforts are assisting the College in realizing its objective of having a faculty and staff who are computer competent. The impact on the curriculum has been significant in two respects: 1) Finding resourceful and effective ways of using the microcomputer in courses and 2) considering changes in the content of the curriculum which may not be possible without computers.

DATA PROCESSING BUDGET

Kean College during the 1983 fiscal year expended $794,000 in appropriated revenues for data processing. Of that amount $267,525 was in salaries and the balance of $526,475 was in non-salary expenditures. The College, in F.Y. 1984, expended $979,000 for the fiscal year excluding the $195,000 in computer grants funded through D.H.E. and computer equipment purchased with external funds. About $299,000 represented salaries and the balance of $680,000 was in non-salary expenditures. Additionally, the College has committed about $109,000 of its Program Improvement funds in F.Y. 1984 for the purchase of computer equipment. The College has increased the expenditure level for data processing by more than 20% in F.Y. 1984 with the largest part of the increase in non-salary items.

The College currently projects a 15 to 20% annual increase in data processing each year F.Y. 1986 through F.Y. 1988. The

largest part of the increase in each fiscal year will be in non-salary expenditures.

Recent studies indicate that nationally four year public colleges and universities assign approximately 4.5 to 5% of their total institutional budget to data processing. Kean College, with the recent increases, is committing between 3.5 to 3.8% of its total budget to data-processing. Further, it is expected that the national average of data-processing expenditures in relation to the total budget will increase in the years ahead.

The College is studying the possibility of establishing an Educational Affiliation Agreement whereby faculty members, staff and students could purchase their own personal computer at a substantial savings. Meetings have been held with representatives I.B.M., Zenith, Apple and Hewlett-Packard. It is expected that an agreement will be in place by September 1985 with one or more of these firms.

Fiscal Year 1986 - Objectives

COMPUTER SCIENCE

The College will, by the Fall 1985, be in the second year of the revised undergraduate program in computer science. The current plan projects the purchase of a Prime 9955 (32 bit) super minicomputer. The Prime 9955 can support up to 256 terminals and is the high end of the Prime line of super minicomputers. The College already has a Prime 9750 and 2250 dedicated to academic computing and the license for Pascal, Fortran 77, Cobol 74 "C", P.L.I, Macro-Assembler, Basic, EMACS and Debugger. The Prime 9955 and 9750 minicomputers would primarily support the major program in computer science and masters level program in management systems analysis. Together the Prime 9955 and 9750 can support up to 384 terminals.

A second microcomputer laboratory containing four (4) IBM AT and sixteen (16) IBM PC's will be established for use in the Computer Science revised major program. The computers will have necessary communication interfaces to be networked.

M.S. MANAGEMENT SYSTEMS ANALYSIS

The microcomputer laboratory presently serving the M.S.M.S.A. program will be expanded . Six IBM AT and three IBM XT systems will be added. The laboratory will also contain five (5) Prime PST 200 terminals which can access the Prime 9955 and 9750 minicomputers located on campus. The IBM PC's and Prime terminals will be networked within the laboratory as well as linked to the IBM main-frame computers at E.C.N. The communications equipment for networking the lab to the local computer center and E.C.N. has been determined and budgeted in F.Y. 1986.

TECHNOLOGY - Manufacturing and Design Curriculum

The Prime 2250 minicomputer will be moved to the technology department to support its initiative in the area of CAD/CAM. The Prime 9955 and 9750 located in the Computer Center will also

support this endeavor. Prime Computer has consented to grant to the College its Medusa Software package valued at approximately $138,000. The Medusa package includes design drafting and design modelling modules. These are very powerful software packages with excellent performance reputations. The CAD/CAM initiative will also include the purchase of five P.C.T. Tektronic G 109 workstations.

MICROCOMPUTER LABORATORIES

(a) The completion of a microcomputer laboratory for the social sciences established in 1984-85 with Program Improvement funds and a Computers in the Curriculua (C.I.C.) grant. The present lab, equipped with twenty-six (26) Apple IIe microcomputers, will be completed with the addition of six (6) Macintosh Systems, a H.P. plotter and necessary printers.

(b) Expand the number of microcomputer systems in the natural sciences (Biology, Chemistry/Physics, Earth and Planetary Environments). Each department has an IBM AT and two (2) IBM PC's. Each department will receive eight additional IBM PC's and associated software purchsed or developed for modeling applications.

COMPUTER INSTITUTE

Training programs and workshops on the use and applications of computers particularly, the local minicomputers and microcomputers, will be offered to faculty and staff. The College will make available an optional personal computer discount purchase plan for faculty members. Several experimental projects will be initiated in the area of information processing and networking using microcomputers and particularly the IBM AT and XT systems. One project will involve the practicality of running statistical packages such as S.P.S.S. and S.A.S., on an IBM XT. A second project will be to examine the uses of the IBM interactive executive program (IBM's UNIX equivalent) for the planned microcomputer applications track in the revised computer science major program. A third project will be the installation of small local area computer networks in selected academic departments using an IBM AT - PC configuration and employing the unix operations system (PC/IX) and the PCNET II networking system. The Institute will sponsor an internal grant program wherein faculty members will receive released time and funding to undertake projects related to computers in the curriculum, networking and/or value added assessment.

Campus Area Network (L.A.N.)

The College will install a backbone transport technology using fiber optics and linking all the buildings on the campus. The backbone interconnection is planned to be modular and hierarchical and to provide sufficient band width for a period extending 10 to 15 years into the future. The backbone interconnection architecture will provide for intercommunications baetween the local area networks (L.A.N.) emerging on campus as well as access to shared resources such as the computer center.

Fiscal Year 1987 - Objectives

COMPUTER SCIENCE

The College will be in the third year of the revised undergraduate major program in computer science. It is anticipated that a number of new courses will be implemented beginning Fall 1986 particularly in the information processing track.

A third microcomputer laboratory containing four IBM AT and twenty (20) IBM PC systems will be established. The laboratory will support courses taught in the major programs as well as provide students with access to IBM PC's for assignments outside of the formal classroom instruction to experiment, do research and pursue independent projects throughout the day. The College will institute a required microcomputer purchase plan for Freshmen students planning to major in Computer Science effective September 1986.

M.S. MANAGEMENT SYSTEMS ANALYSIS

The College plans to continue development of the M.S.M.S.A. started in the Fall 1985. The microcomputer laboratory started in 1985-86 will be enhanced. An additional resident faculty member will be employed.

MICROCOMPUTER LABORATORIES

(a) A microcomputer laboratory containing twenty-five (25) Zenith microcomputer systems will be established to further support the general education program. There will then be two (2) microcomputer laboratories dedicated to the general education program. The program includes an 18 credit core curriculum which will be required of all students. An objective of the core courses is to reinforce and further develop basic skills in communications, critical thinking and reasoning. Knowledge and use of microcomputer technology and application is viewed as an important aspect in facilitating in the achievement of this objective.

(b) A microcomputer laboratory containing one (1) IBM AT and fifteen (15) XT systems, each with 600 K+, and three dimensional screen capability, will be established in the Department of Technology. This lab will help support the department's courses in the areas of CAD/CAM, computer numerical control, robotics, etc, and support the initiative started in F.Y. 1986 using the Prime minicomputer and Medusa software.

(c) The establishment of a microcomputer laboratory to use in teaching writing. The proposed laboratory will contain one IBM AT and sixteen (16) IBM personal computers, with which words processing and other software packages can be used to support the instruction provided in writing courses. A key objective is the design of a model program for the teaching of writing that incorporates computer technology into an array of writing courses, including journalism and creative writing.

(d) Further expansion of the number of microcomputers in the natural sciences (Biology, Chemistry/Physics, Earth and Planetary Environments) will be provided. Additional support for

the purchase of computer based scientific instrumentation will be provided.

PORTABLE MICROCOMPUTER FACILITIES (LOCATIONS)

There are tentative plans to establish in F.Y. 1987 two locations on the campus (computer center and student residence halls) where students who own a personal computer can access the large C.P.U.'s located at E.C.N. and the Campus Computer Center on a 24 hour basis. This recognizes the coming availability of small portable (7 to 10 lbs) personal computers with considerable memory and capability. The College will provide the telecommunications that will be required.

COMPUTER INSTITUTE

The College envisions expanded support and enhancement of the Institute's training and research activities given the added computer knowledge and sophistication of faculty and staff. The Institute will continue to serve as a base for interaction among faculty members from the different disciplines and schools for sharing information, research, ideas, new directions, etc. Further support will be provided for cooperative and independent research projects in the areas of telecommunications (data/voice/image processing) and networking. It is also anticipated that more students will be involved on a project basis in the Institute's programs and research. The internal grant program started in F.Y. 1986 and the initiative to establish departmentally based local areas networks will continue.

FISCAL YEAR 1988

COMPUTER SCIENCE

The College anticipates that the revised major program in computer science will be fully implemented with a complete offering of courses in each of the three tracks; science and technology, information processing and microcomputer applications. The science and technology track is eligible for accreditation by the Computer Science Accreditation Board (C.S.A.B.)

Current plans envison the acquisition of a second Prime 9955 minicomputer in F.Y. 1988. The two Prime 9955's will continue to serve the academic computing requirements of the undergraduate computer science major program as well as the masters program in management systems analysis.

The Prime 9750 acquired in F.Y. 1985 will be dedicated to the Technology Department to support CAD/CAM applications. The Prime 2250 will be moved to the natural sciences (Biology, Chemistry/Physics, Earth and Planetary Environments).

M.S.M.S.A.

The M.S.M.S.A. will be fully implemented effective Fall 1987. This will include the addition of a resident faculty member. Additionally, enhancements to the existing laboratory equipment and software will occur as required.

MICROCOMPUTER LABORATORIES

(a) The Apple II plus microcomputer laboratory established in Fall 1982 for use in the Developmental Studies Mathematics Program will be replaced. The decision on the type of microcomputers to be purchased will be made in the Spring 1986. The recent introduction of new microprocessors (Motorola MC 68020) capable of manipulating 32 bits of information at a time would make any judgment at this time premature.

(b) The College will establish a microcomputer laboratory for use in the Developmental Studies Reading Program. The choices of microcomputers to be determined later.

(c) The Fine Arts microcomputer laboratory established in F.Y. 1985 will be enhanced and a second microcomputer laboratory established.

(d) A microcomputer laboratory for the Music Department will be established.

(e) The College will establish microcomputer laboratories to support the major programs in the health professions. The curriculum for the baccalaureate program in Medical Record Administration already reflects the need in that field for its graduates to be knowledgeable about the use of computerized data bases for health records. By the 1987-88 Academic Year, arrangements for collaboration between the MRA program, the nursing program, and other health care programs should be such that records can be stored, processed, and released in a manner similar to that within a health care facility. These arrangements are expected to require eight (8) Apple IIe Systems within the MRA program and eight (8) other Apple IIe systems distributed among the other four programs in health care.

COMPUTER INSTITUTE

The College envisions continued activity within the Institute in the training of faculty members and staff, opportunities for students to work in Institute sponsored projects, internal grant awards for faculty, further efforts in the area of networking and ongoing initiatives in the area of research and development.

GENERAL F.Y. 1986 - F.Y. 1988

There is an essential need to provide additional facilities for academic computing. The Capital Improvement Plan (C.I.P.) approved by the Kean College Board of Trustees in June 1985 assigns high priority to a major addition and renovation to the College Computer Center. The current Center is already operating at near capacity. The C.I.P. also includes requests for the renovation of existing classrooms to microcomputer laboratories and major renovations to the Bruce Hall science building (circa 1961) and the Technology building (circa 1958).

While this plan is essentially an academic computer plan, concurrent efforts to improve computing support in the library will be pursued. The Department of Higher Education has been particularly helpful in this area. The recent purchase of Colleague an integrated data base management system should enable the College over the next 6 to 12 months to dramatically improve its student services and research capabilities.

The College will, during the three year period F.Y. 1986-88, explore and experiment, in cooperation with the Department, The Educational Computing Network and other organizations the opportunities and challenges associated with networking and telecommunications including the best use of fiber optics, protocol conversions, and Data/Voice/Image processing and transmission. We believe efforts will, to a large extent, involve the Educational Computing Network and require continued budgetary commitments for both research and implementation.